

**INTERNATIONAL ASTEROID WARNING NETWORK (IAWN)****POTENTIAL ASTEROID IMPACT NOTIFICATION – HYPOTHETICAL SIMULATION**

Date: April 3, 2023  
From: International Asteroid Warning Network  
To: Chair, Space Mission Planning Advisory Group (SMPAG);  
United Nations Office of Outer Space Affairs  
Title: Potential for Impact of Near-Earth Asteroid 2023 PDC

<b>Impact Probability:</b>	1% as calculated by NASA JPL CNEOS and ESA NEOCC
<b>Impact Date:</b>	22 OCTOBER 2036
<b>Impact Risk Corridor:</b>	From the South Pacific to the southern Indian Ocean, crossing North America, the Atlantic Ocean, and Africa
<b>Approximate Size:</b>	220 - 660 meters (720 - 2160 feet) determined from its observed brightness and an assumed range of most likely surface reflectivities
<b>Expected Damage</b>	
<b>Level if Impact Occurs:</b>	Uncertain – Regional to Continental. Energy released most likely to be in the range 54 Mt to 5.5 Gt

**ADDITIONAL DETAILS:**

- There is a 1% probability that asteroid 2023 PDC will impact Earth on 22 October 2036 as calculated by the NASA JPL Center for Near-Earth Object Studies and the ESA Near-Earth Objects Coordination Centre. While there is uncertainty in whether the asteroid will impact Earth, if an impact occurs it will be on this date.
- The impact risk corridor, which is the region of Earth where it is possible that 2023 PDC could impact, extends from the South Pacific to the southern Indian Ocean, crossing North America, the Atlantic Ocean, and Africa.
- The asteroid 2023 PDC has been tracked since it was first observed on 10 January 2023 by an international team using the Dark Energy Camera (DECam) at the Víctor M. Blanco 4-meter Telescope at Cerro Tololo Inter-American Observatory in Chile and searching in the twilight region of the sky looking for asteroids in the inner Solar System.
- Further observations will reduce the uncertainty in the asteroid's trajectory and impact probability. The asteroid will be almost continuously observable after late 2023, although it will be distant and quite faint and will likely require large (2-meter) telescopes.
- The asteroid size of 220 - 660 meters (720 - 2160 feet) is determined from its observed brightness (absolute magnitude H is determined to be 19.4) and an assumed range of most likely surface reflectivities.
- The size cannot be estimated with further precision without radar observations or imagery from a spacecraft that can closely approach the asteroid. The asteroid is too distant for radar observations and will not come within range until 2036.

This notification is issued by the International Asteroid Warning Network (IAWN) in accordance with report [SMPAG-RP-003](#) on Recommended Criteria & Thresholds for Action for Potential NEO Impact Threat that defines the threshold for issuing warnings of possible impact effects, which is a probability of impact is greater than 1% and a rough size estimated to be greater than 10 meters (33 feet).

IAWN is a worldwide collaboration of asteroid observers and modelers that was recommended by the United Nations. <https://iawn.net>

Point of Contact: IAWN Coordinating Officer for the IAWN Steering Committee [email]

Graphics:

- Helio-centric orbit diagram relative to Earth orbit
- Impact risk corridor maps

